

MARKED UP VERSION OF AMENDMENTSIn the Claims:

Claims 15, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27 and 28 have been amended as follows:

15. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the forming of the barrier film comprises the following substeps:

vapor depositing a metal halide on the cleaned heated substrate surface at a temperature of 500 to 700°C, in a vacuum having a background pressure of less than approximately  $10^{-11}$  Torr, and wherein the metal halide deposition is conducted at a rate permitting the metal halide vapor to react with the substrate surface to form a monolayer of metal atoms selected from barium atoms, strontium atoms, and cesium atoms, singly or in combinations thereof, on said surface of said substrate; and

continuing, after forming the monolayer, the vapor depositing of the metal halide to form a metal halide layer regime upon the monolayer until the desired barrier film thickness has been achieved.

16. (Amended) A process of making a semiconductor device according to claim [14] 29, wherein the forming of the single crystal transition metal on the barrier film comprises depositing a transition metal on the barrier film concurrent with heating the substrate and barrier film surface to a temperature effective to cause the transition metal to assume a monocrystalline structure.

17. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the forming of the single crystal transition metal on the barrier film comprises the substeps of depositing a transition metal on the barrier film at a temperature below which the metal forms with a single crystal structure, and then annealing the resulting metallized substrate at a temperature effective to cause the transition metal to assume a monocrystalline structure.

18. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the forming of the single crystal transition metal on the barrier film comprises depositing a transition metal on the barrier film concurrent with heating the substrate and barrier film surface to approximately 375 C or higher.

20. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the forming of the single crystal transition metal on the barrier film comprises the substeps of depositing a transition metal on the barrier film at a temperature below 375 C, and then annealing the resulting metallized substrate at a temperature of 375 C or higher.

22. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the barrier film comprises a homoepitaxial portion comprised a metal halide selected from barium halide, strontium halide, and cesium halide, located between the monolayer and the transition metal.

23. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the homoepitaxial portion of the barrier film is selected from  $\text{BaF}_2$ ,  $\text{BaCl}_2$ ,  $\text{SrF}_2$ ,  $\text{SrCl}_2$ ,  $\text{CsF}$ , or  $\text{CsCl}$ .

24. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the barrier film has a thickness of less than 100Å.

25. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the barrier film has a thickness ranging from approximately from 20Å to approximately 75Å.

26. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the transition metal is selected from the group consisting of copper, silver, gold and platinum.

27. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the transition metal comprises copper.

28. (Amended) A process for making a semiconductor device according to claim [14] 29, wherein the substrate material comprises a semiconductor.

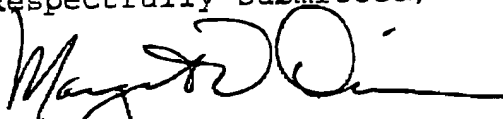
#### REMARKS

Claims 15-29 are in the case. Claim 29, an exact duplicate of previously cancelled claim 14, has been added as a new claim. Claims 15, 16, 17, 18, 20, 22, 23, 24, 25,

26, 27 and 28 have been amended to depend from new claim 29.

In view of the foregoing, the application is now believed to be in condition for allowance. An early and favorable reconsideration of claims 15-29 is earnestly solicited.

Respectfully submitted,



MARGUERITE O. DINEEN  
Reg. No. 27,779

Marguerite O. Dineen  
Attorney for the Inventor  
Naval Surface Warfare Center  
17320 Dahlgren Road  
Dahlgren, Virginia 22448-5100  
(540) 653-7121